

AMENDMENT

In the claims:

Claims 1-2. (cancelled)

Claim 3. (currently amended) An isolated nucleic acid sequence comprising: (a) the nucleic acid sequence of SEQ ID NO:1, or a fully complementary sequence thereof; (b) a nucleotide sequence which encodes amino acid residues 162 to 365 of SEQ ID NO:2, or a fully complementary sequence thereof; (c) nucleotides 291-2153 ~~291-2956~~ of SEQ ID NO:1, or a fully complementary sequence thereof; ~~(d) a nucleotide sequence encoding a polypeptide having at least 95% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2, wherein the polypeptide is an *Arthrobacter* hsp70 protein, or the fully complementary sequence thereof;~~ or (e) a nucleotide sequence, or a fully complementary sequence thereof, which under stringent conditions hybridizes with the sequence of SEQ ID NO:1 or its complement, wherein the stringent condition comprises washing for 1 hour at 55° C with 1 X SSC and 0.1% SDS.

Claim 4. (previously presented) The isolated nucleic acid sequence of Claim 3 fused in-frame to a heterologous coding sequence.

Claim 5. (previously presented) The isolated nucleic acid sequence according to claim 4, wherein said heterologous coding sequence encodes an antigen from a source selected from the group consisting of bacteria, virus, fungus, protozoa, nematode, and tumor.

Claim 6. (previously presented) The isolated nucleic acid sequence according to claim 4, wherein said heterologous coding sequence encodes Infectious Pancreatic Necrosis Virus protein 2 or 3.

Claim 7. (previously presented) A DNA expression vector comprising the nucleic acid sequence of Claim 3, wherein said nucleic acid sequence is operably linked to a transcriptional regulatory sequence.

Claim 8. (previously presented) An isolated host cell transformed with the DNA expression vector of claim 7.

Claims 9-16. (cancelled)

Claim 17. (previously presented) An isolated nucleic acid molecule, comprising a nucleic acid sequence encoding an open reading frame of SEQ ID NO:2, or its fully complementary sequence thereof.

Claims 18-30. (cancelled)

Claim 31. (previously presented) A vaccine composition comprising the DNA expression vector of Claim 7 and pharmaceutically acceptable carrier.

Claim 32. (previously presented) The vaccine composition of Claim 31, wherein said DNA expression vector further comprises a heterologous coding sequence encoding an antigen, wherein said heterologous coding sequence is operatively linked to said nucleic acid sequence, wherein said antigen is from a source selected from the group consisting of bacteria, virus, fungus, protozoa, nematode, and tumor.

Claim 33. (previously presented) A method of preventing a disease in a fish, the method comprising administering to said fish the vaccine composition of Claim 32.

Claim 34. (cancelled)

Claim 35. (previously presented) The method of Claim 33, wherein the disease is caused by Infectious Pancreatic Necrosis Virus or Infectious Salmon Anaemia Virus.

Claim 36. (previously presented) The method of Claim 33, wherein the disease is bacterial kidney disease or salmonid rickettsial septicaemia.

Claim 37. (previously presented) The isolated nucleic acid sequence according to Claim 4, wherein said heterologous coding sequence encodes a polypeptide selected from the group consisting of Infectious Pancreatic Necrosis Virus protein 1, Infectious Pancreatic Necrosis Virus protein 2, Infectious Pancreatic Necrosis Virus protein 3, Infectious Pancreatic Necrosis Virus NS, Infectious Salmon Anaemia Virus hemagglutinin, Infectious Salmon Anaemia Virus nucleocapsid, Infectious Salmon Anaemia Virus polymerase, Infectious Salmon Anaemia Virus segment 7 P4 protein, Infectious Salmon Anaemia Virus segment 7 P5 protein, *P. salmonis* OspA, and *P. salmonis* IcmE.

Claim 38. (previously presented) The isolated nucleic acid sequence according to Claim 4, wherein said heterologous coding sequence encodes Infectious Pancreatic Necrosis Virus protein 2.

Claim 39. (canceled)